

Application No. 10/667,268

Remarks

Applicants thank the Examiner for his careful consideration of the application.
Claims 1-7, 14, 15, 17 and 19 stand rejected.

Claim Rejections - 35 USC § 102

The Examiner rejected claims 1, 3, 5-7, 14, 15, 17, and 19 under 35 USC § 102(b) as being anticipated by Lee (U.S. 6,185,394). These rejections are respectfully traversed.

In claim 1 Applicants recite a method for extending the lifetime of a photoreceptor belt, wherein a spring-loaded mechanism supplies a force to a tensioning member that tensions the belt when in its operational position inside of a printing device. The method includes reducing the tension in the belt by substantially completely removing the force supplied by the spring-loaded mechanism from the tensioning member when the printing device enters an idle state without substantially removing the tension in the belt.

According to Lee, when the printing device is operating normally, the rocking members 430a and 430b rotate such that the other ends thereof extend in a direction C. Accordingly, the auxiliary frame 410 moves in the direction C by the elastic force of the spring 442, and the tension roller 40 is pushed in the direction C, thereby applying a tension to the photoreceptor belt 10. In the loosened tension mode, the rocking members 430a and 430b rotate such that the other ends thereof move toward a direction D, and the auxiliary frame 410 is simultaneously moved in the direction D. As a result, the pressure applied to the tension roller 40 is decreased and the tension roller 40 moves a predetermined distance in the direction D, thereby letting loose the tension applied to the photoreceptor belt 10.

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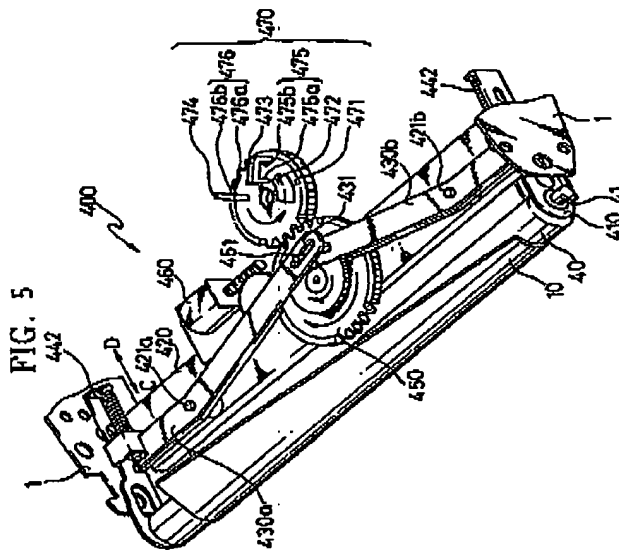
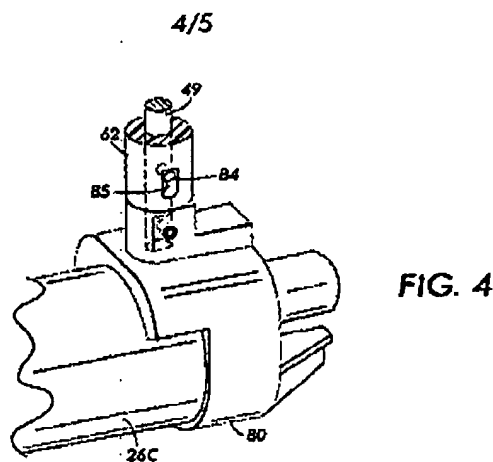


Figure 5 of Lee does not disclose substantially completely removing the spring-loaded force from tensioning member 40. Actually, Figure 5 of Lee does not disclose applying tension to a tension roller at all, but to a frame attached to the tension roller. Regardless, Figure 5 of Lee discloses lifting the ends of arms 430a and 430b such that the auxiliary frame moves in the direction D (via springs 442), thereby moving the tension roller in the direction D as well. However, because the auxiliary frame moves in response to the force supplied to the spring, the (indirect) force on the tensioning member 40 due to the springs 442 is not substantially completely removed, nor is it even reduced. The only apparent lessening of tension on the member 40 is due to the lessening of force provided by the

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photoreceptor belt. The Examiner has failed to show that Figure 5 of Lee discloses substantially completely removing a spring-loaded force from tensioning member.

Applicants' disclosed embodiments include embodiments where the operating tension is provided by sleeves 60, 62, which surround the tension roller mounting arms. These sleeves 60, 62 supply a biasing force to the tension roller to keep the tension in the belt sufficiently high for operating purposes. In embodiments, the sleeves provide spring-loaded pressure to the tension roller 26C. This pressure keeps the tension roller 26C in an extended state, such that the belt has sufficient tension during operation of the printing device 10. The tension in the roller 26C is reduced by engaging and lifting sleeves 60, 62, thereby reducing the pressure the sleeves apply to the tension roller 26C. When the sleeves are lifted, the only force contributing to tension in the belt 18 is gravity acting on the belt 18 and on the roller 26C. Figure 4 shows one end of the tension roller fully tensioned by sleeve 62. Pins 82, 84 are not supported by slots 83, 85. Thus, the tension roller still provides tension to the photoreceptor belt due to the force of gravity on the tension roller.



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In contrast to the Apparatus disclosed in Figure 5 of Lee, a spring-loaded force is removed from the tension roller 26C when the sleeves are lifted. The tension roller itself is not lifted, and in fact is allowed to hang freely.

The Examiner has not established that Lee anticipates the claim 1 either as previously presented or currently amended. To sustain a rejection based upon 35 USC § 102(b), the cited reference must disclose each and every limitation of the claim. Applicants recite that the force supplied by the spring-loaded mechanism to the tensioning member is completely removed. The passage cited by Lee discloses repositioning the tensioning member, but does not disclose substantially completely removing a spring-loaded force therefrom. The Examiner has not shown that Lee's tension adjusting device reduces the force on the tension roller substantially completely. Therefore, claim 1 should be allowable over Lee.

As claims 3, 5-7, and 19 depend from claim 1 and include all the limitations of claim 1, claims 3, 5-7, and 19 should be allowed if claim 1 is allowed.

In claim 14, Applicants recite an endless belt tensioning apparatus, wherein the belt is wrapped around a support apparatus including at least one support for the belt, a tensioning member, and a biasing means acting on the tensioning member, the tension control apparatus. The belt tensioning apparatus includes a frame connected to the support apparatus, a cam connected to the frame, and a first lever arm having first and second ends. The biasing means includes a first spring-loaded mechanism for providing a biasing force and a first sleeve for transmitting the biasing force to the tensioning member. The first lever arm is pivotally connected to the frame at a pivot point between the first and second ends of the first lever arm. The first end of the first lever arm is positioned such that when the cam is rotated, the cam causes the first lever arm to pivot about the pivot point such that the second end of the first lever arm engages the first sleeve of the biasing means such that the biasing force from the first spring-loaded mechanism is no longer transmitted to the tensioning member.

The Examiner has not established that Lee anticipates the claim 14. To sustain a rejection based upon 35 USC § 102(b), the cited reference must disclose each and every limitation of the claim. The Examiner has not shown where Lee discloses a biasing means

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including a first spring-loaded mechanism for providing a biasing force and a first sleeve for transmitting the biasing force to a tensioning member. Nor has he shown a lever arm that pivots about a pivot point such that the lever arm engages the first sleeve such that the biasing force from the first spring-loaded mechanism is no longer transmitted to the tensioning member. The Examiner asserts that auxiliary frame 410 serves the purpose of a sleeve. However, the frame 410 never disengages from the tensioning member 40 and therefore, never removes transmission of the spring-loaded force. Again, the only reduction in force on the tensioning member 40 in Lee is due to lessened pressure from the belt. Applicants' invention removes spring-loaded force from a tensioning member without lifting or otherwise moving the tensioning member. For the foregoing reasons claim 14 should be allowable over Lee.

As claims 15 and 17 depend from claim 14, claims 15 and 17 should be allowed if claim 14 is allowed.

Claim Rejections - 35 USC § 103

Claim 2 is rejected under 35 USC § 103(a) as being unpatentable over Lee (U.S. 6,185,394) in view of Rosati (U.S. 4,416,532). This rejection is respectfully traversed.

Claim 2 should be allowed as the Examiner has failed to establish a prima facie case of obviousness. In order to sustain an obviousness rejection under 35 U.S.C. 103(a), the Examiner must show that a combination of the cited references teach or suggest all the limitations of the claim being rejected. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). The Examiner has failed to show that the combination of references teaches or suggests all the limitations of claim 2. Specifically, the Examiner has not shown substantially completely removing a spring-loaded force from a tensioning member when a device enters an idle state. Claim 2 includes all the limitations of claim 1 and further adds that the belt is detensioned manually. As stated in Applicants' response to the rejection of claim 1 under 35 USC § 102(b), the Examiner has not shown where Lee discloses removing a spring-loaded force from a tensioning member when a device enters an idle state. The Examiner combines Rosati with Lee because Rosati apparently discloses a manually adjusted lever for

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detensioning a belt. However, the Examiner has pointed to no part of Rosati that makes up for the deficiencies in Lee. Therefore, claim 2 should be allowed.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. 6,185,394) in view of Yu et al. (U.S. 6,101,353). This rejection is respectfully traversed.

Claim 4 should be allowed as the Examiner has failed to establish a prima facie case of obviousness. In order to sustain an obviousness rejection under 35 U.S.C. 103(a), the Examiner must show that a combination of the cited references teach or suggest all the limitations of the claim being rejected. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). The Examiner has failed to show that the combination of references teaches or suggests all the limitations of claim 4. Specifically, the Examiner has not shown substantially completely removing a spring-loaded force from a tensioning member when a device enters an idle state. Claim 4 includes all the limitations of claim 1 and further includes automatic detensioning and determining that the printing device is in an idle state a fixed amount of time after the last print job. As stated in Applicants' response to the rejection of claim 1 under 35 USC § 102(b), the Examiner has not shown where Lee discloses removing a spring-loaded force from a tensioning member when a device enters an idle state. The Examiner combines Yu with Lee to reject the additional elements of claims 3 and 4. However, the Examiner has pointed to no part of Yu that makes up for the deficiencies in Lee. Therefore, claim 4 should be allowed.

Conclusion

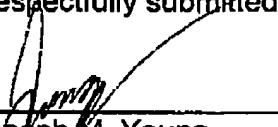
No additional fee is believed to be required for this amendment. However, the undersigned Xerox Corporation attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025. This also constitutes a request for any needed extension of time and authorization to charge all fees therefor to Xerox Corporation Deposit Account No. 24-0025.

A telephone interview is respectfully requested at the number listed below prior to any further Office Action, i.e., if the Examiner has any remaining questions or issues to address

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after this paper. The undersigned will be happy to discuss any further Examiner-proposed amendments as may be appropriate.

Respectfully submitted,



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